REMARKS/ARGUMENTS

Claims 45-66 and 72-75 were pending. Claims 51, 57, 66 and 72-75 have been cancelled without intending to abandon or to dedicate to the public any patentable subject matter. Claims 45, 46 and 63-65 have been amended herein. Support for these amendments is found throughout the specification. Applicant submits that no new matter is added by these amendments.

Restriction Requirement

The Restriction Requirement mailed May 21, 2008 was made final and claims 48, 52-57 and 63-65 were withdrawn from further consideration by the Examiner.

The comments made in the Action to support the Restriction indicate a misunderstanding of the cited art and the claimed invention. Therefore, applicant respectfully submits the following to clarify the nature of the claimed invention. The present inventors have identified a fundamental and hitherto unrecognized feature of the body's response to chronic disease states such as cancer, namely that the immune system is constantly cycling in diseases characterized by the production of regulator cells, enabling use of currently available agents in new treatment regimens to more effectively treat these diseases.

In response to the Restriction Requirement, it was noted that WO 02/13828 relates to the requirement of "resetting" the immune system. The Examiner's asserted that claims 1, 2 and 10 of WO 02113828 make no mention of resetting of the immune system. While the claims do not explicitly mention the term "resetting," each of these claims recite administering to a subject a composition that increases the number of, and/or activates, effector cells directed against the retrovirus, which is a resetting step. The subject is treated to evoke an immune system response as if it is encountering the antigen (in the case of the cited art a retroviral antigen) for the first time, thus allowing emerging effector cells to be maintained and subsequent expanding regulator cells to be targeted. This strategy provides a *single* opportunity to target the regulator cells and there is no disclosure or suggestion in WO 02113828 that the immune system is constantly cycling in a disease state.

The Examiner's suggestion that the cited document indicates that "at the timing of administration of an agent to treat a disease is based upon analysis of cycling of effector cells" is incorrect. There is no indication in WO 02113828 that any cell or marker of the immune system

is cycling.

Accordingly, applicant submits that the Restriction Requirement is not proper, and each of the claims filed herewith should have been considered by the Examiner.

The Action further states that claims 48, 52-57 and 63-65 are withdrawn from further consideration as being drawn to a nonelected species, there being no allowable generic or linking claims. Applicant notes that the species election requirement is primarily, if not solely, intended to facilitate a search by the Examiner, and the Examiner is obligated to examine the generic claims and submit that the scope of the claims of the present invention is not limited to the elected species. In the event a generic claim is found allowable, the species must be rejoined.

Objection to the Specification

The Examiner has objected to the Specification as containing an embedded hyperlink. Applicant has amended the specification to remove the noted hyperlink.

Claim Rejections Under 35 U.S.C. § 102

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631 (Fed. Cir. 1987). Applicant respectfully submits that the currently pending claims are not anticipated by any of the cited references.

WO'257

Claims 45-47, 49-51, 58-62 and 72-75 under 35 U.S.C. § 102(b) were rejected for being anticipated by WO'257 (PCT Publication No. WO 2003/068257).

The invention disclosed in WO'257 relates to optimizing effector cell function in cancer therapy by at least partially resetting the immune response to a tumor antigen, thus providing the means to take advantage of the "effector cell population to control tumor growth." Page 3, lines 30-34 of WO '257. Each of the claims of WO '257 recite this resetting step, for example, part i) of claim 1 of the cited document relates to ""reducing tumor load in the subjects;" claim 11 of the cited document has the step of "a part of the tumor removed by surgery, or has been exposed by radiotherapy;" whereas part i) of claim 12 of the cited document relies on administering a

tumor antigen which increases the number of and/or activates effector cells directed against the tumor antigen. WO '257 in no way suggests that the immune system is *cycling* in patients with cancer. In fact, WO'257 teaches that it is essential to at least partially reset the immune system to provide an opportunity to target the regulator cells. Thus, WO'257 relates to "resetting" the immune system through various means to target emerging regulator cells which are increasing in number as a direct result of the resetting step.

In contrast, the presently claimed subject matter is based on the identification of the *cycling* of the immune system in disease states characterized by the production of regulator cells. Amended claims 45 and 46, and all other claims dependent therefrom, require the detection of cycling of the immune system and determination of the administration of an agent based upon the cycling of the immune system; the administration of the agent is at a time period when the numbers of regulator cells and/or their activity are increasing in the cycle.

The Action refers to the various timings and lengths of monitoring disclosed in WO'257. However, a closer reading of the reference reveals that many of these statements are taken out of context. In particular, the Examples of the WO'257 disclose that there is a relatively narrow window of opportunity to effectively treat the disease following the "resetting" of the immune system, namely about 14 days following the reset. Thus, WO'257 does not suggest that there is a need for prolonged monitoring beyond this point to determine when to administer the agent. (At page 12 line 20, WO'257 indicates that "optimally the monitoring is continued to determine the effect of the agent." However, this is not in the context of determining when the agent should be administered, it is merely to determine whether the disease has been effectively treated, and if not, the whole procedure, including the "resetting" needs to be repeated (see page 12 lines 21-25 of WO 031068257).)

Thus, WO'257 does not disclose all elements of the instant claims and therefore, does not anticipate the claims of the instant application.

Child

Claims 45, 47, 49, 50, 58, 60, 62, 66 and 72-74 under 35 U.S.C. § 102(b) were rejected for being anticipated by *Child* (Cancer 45(2):318-26, 1980). The Action states that *Child* teaches the monitoring of patients with Hodgkin's disease and non-Hodgkin's lymphomas for the levels

of serum CRP. The Action further acknowledges that *Child* does not indicate that CRP is monitored to determine the timing of the administration of an agent to patients. Action at page 6.

Applicant submits that *Child* analyzes a number of immune system markers, in particular CRP levels, over an extended period of time in patients with Hodgkin's disease and non-Hodgkin's lymphoma. However, there is no suggestion in *Child* for taking enough samples over a sufficient period of time to detect immune system cycling. Furthermore, similar to WO'257, discussed above, *Child* does not recognize the presence of regulatory cells and does not contemplate or suggest a period of time when the numbers of regulator cells and/or their activity is increasing, during which an agent is to be administered, as required by the instant claims. Thus, *Child* does not disclose the elements related to the detection of cycling of the immune system and administration of an agent based on the cycling of the immune system. Since *Child* does not disclose all elements of currently amended claim 45 (or Claims 47, 49, 50, 58, 60, 62, 66 dependent therefrom), Applicant submits that these claims are not anticipated by *Child*, and respectfully request that this rejection be withdrawn.

Little

Claims 45-47, 49, 60 and 62 under 35 U.S.C. § 102(b) were rejected for being anticipated by *Little* (Current Opinions In Oncology 12:438-44, 2000). *Little* discloses a chemotherapy regimen including dosage adjustment based on a patient's CD4 count. However, *Little* does not teach or suggest that the immune system is cycling in diseased states characterized by the production of regulator cells. Thus, while the CD4 count is monitored, *Little* does not teach or suggest a period of CD4 count variation in relation to regulator cell expansion nor the identification of a time for administration of chemotherapeutic agents. Thus, *Little* does not disclose the elements related to the detection of cycling of the immune system and administration of an agent based on the cycling of the immune system. Since *Little* does not disclose all elements of Claims 45-47, 49, 60 and 62, Applicant submits that these claims are not anticipated by *Little*, and respectfully request that this rejection be withdrawn.

Eda

The Claim 66 was rejected for being anticipated by Eda (Journal of Clinical Laboratory Analysis 12:137-44, 1998). Without acquiescing in this rejection, solely to advance prosecution, Applicant has cancelled Claim 66.

In light of these comments and claim amendments, Applicant respectfully requests that all rejections under 35 U.S.C. § 102(b) be withdrawn.

Double Patenting

The Action contains two provisional non-statutory obviousness-type double patenting rejections, which the Applicant respectfully traverses. An obviousness-type double patenting rejection is appropriate when a claim merely defines an obvious variation of an invention claimed in a patent. M.P.E.P. § 804(II)(B)(1). A double-patenting rejection must rely on a comparison with the claims in an issued, or to be issued, patent. M.P.E.P. § 804(III). MPEP § 804 explains that the nonstatutory obviousness-type double patenting rejection is appropriate only where the examined claim is not patentably distinct from the reference claim because the examined application claim is either anticipated by, or would have been obvious over, the reference claim.

Claims 45-47, 49-51, 58-62 and 72-75 were rejected under obviousness-type double patenting for being unpatentable over claims 26-28, 31, 32, 35, 36-38 and 42-47 of co-pending U.S. Patent Application No. 10/503,794. Claims 45-47, 49-51, 58-62 and 74 were further rejected for being unpatentable over claims 1-4, 6, 10-13 and 15 of copending U.S. Patent Application No. 12/333,369.

Applicant respectfully submits that these provisional obviousness-type double patenting rejections will be addressed at such time that claims of the instant application or the co-pending patent applications cited by the Examiner have been found allowable. As this is not currently the status of any claims in the instant or the co-pending patent applications, Applicant requests that this rejection be held in abeyance.

Based upon the foregoing, Applicant believes that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,
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